

What is claimed is  
**CLAIMS**

1. Rinse agents for machine dishwashing containing alkoxyated carboxylic acid esters corresponding to formula (I):



10 in which  $\text{R}^1\text{CO}$  is an aliphatic acyl group,  $\text{AlkO}$  stands for  $\text{CH}_2\text{CH}_2\text{O}$ ,  $\text{CHCH}_3\text{CH}_2\text{O}$  and/or  $\text{CH}_2\text{CHCH}_3\text{O}$ ,  $n$  is a number of 1 to 20 and  $\text{R}^2$  is an aliphatic alkyl group.

15 2. Rinse agents as claimed in claim 1, characterized in that they contain alkoxyated carboxylic acid esters corresponding to formula (I) in which  $\text{R}^1\text{CO}$  is an aliphatic acyl group containing 8 to 18 carbon atoms,  $\text{AlkO}$  stands for a  $\text{CH}_2\text{CH}_2\text{O}$  group,  $n$  has an average value of 5 to 15 and  $\text{R}^2$  is a methy group.

20 3. Rinse agents as claimed in claim 1 or 2, characterized in that they contain alkoxyated carboxylic acid esters corresponding to formula (I) which have been produced by reaction of carboxylic acids with alkylene oxides in the presence of calcined hydrotalcite.

4. Rinse aids as claimed in any of claims 1 to 3, characterized in that the alkoxyated carboxylic acid esters are present in quantities of 0.5 to 40% by weight.

25 5. Rinse agents as claimed in any of claims 1 to 4, characterized in that the alkoxyated carboxylic acid esters are present in admixture with other nonionic surfactants selected in particular from the group of fatty alcohol polyglycol ethers, alkyl oligoglucosides, fatty acid-N-alkyl glucamides, hydroxy mixed ethers and/or mixed ethers.

30 6. Rinse agents as claimed in claim 5, characterized in that alkoxyated carboxylic acid esters are present in admixture with alkyl polyglycosides corresponding to formula (II):

(II)

7. Rinse agents as claimed in claim 5, characterized in that alkoxylated carboxylic acid esters are present in admixture with fatty acid-N-alkyl polyhydroxyalkylamides corresponding to formula (III):

(III)

15 where R<sup>5</sup>CO is an aliphatic acyl group containing 6 to 22 carbon atoms, R<sup>4</sup> is an alkyl or hydroxyalkyl group containing 1 to 4 carbon atoms and [Z] is a linear or branched polyhydroxyalkyl group containing 3 to 12 carbon atoms and 3 to 10 hydroxyl groups.

8. Rinse agents as claimed in claim 5, characterized in that alkoxyated  
20 carboxylic acid esters are present in admixture with fatty alcohol  
polyethylene glycol/polypropylene or polybutylene glycol ethers  
corresponding to formula (V):

(V)

in which R<sup>6</sup> is an alkyl and/or alkylene group containing 8 to 22 carbon atoms, MO is a propylene oxide and/or a butylene oxide unit, p is a number of 1 to 15 and m is 0 or a number of 1 to 10.

9. Rinse agents as claimed in claim 5, characterized in that alkoxyated  
30 carboxylic acid esters are present in admixture with fatty alcohol  
polypropylene glycol/polyethylene glycol ethers corresponding to formula

Figure 1 consists of four schematic diagrams labeled (a) through (d). Diagram (a) is a top view of a rectangular tank. It features a central vertical channel and a horizontal channel intersecting it. A flow meter is connected to the horizontal channel. Diagram (b) is a side view of the tank, showing the vertical channel and the flow meter. Diagram (c) is another top view, similar to (a), but with a different internal structure. Diagram (d) is a side view similar to (b), showing the vertical channel and the flow meter.

(VI):



5 in which  $\text{R}^7$  is an alkyl and/or alkenyl group containing 8 to 22 carbon atoms,  $r$  is a number of 1 to 10 and  $q$  is a number of 0 to 15.

10. Rinse agents as claimed in claim 5, characterized in that alkoxyated carboxylic acid esters are present in admixture with hydroxy mixed ethers corresponding to formula (VII):

10



15

in which  $\text{R}^8$  is an alkyl and/or alkylene group containing 4 to 18 carbon atoms,  $\text{R}^9$  is hydrogen or a methyl or ethyl group,  $\text{R}^{10}$  is an alkyl group containing 2 to 22 carbon atoms,  $x$  is 0 or a number of 1 to 10,  $y$  is a number of 1 to 30 and  $z$  is the number 1.

11. Rinse agents as claimed in any of claims 5 to 10, characterized in that the alkoxyated carboxylic acid esters and the other nonionic surfactants are present in a ratio by weight of 10:90 to 80:20.

20

12. Rinse agents as claimed in any of claims 1 to 11, characterized in that they contain mono- and/or polybasic carboxylic acids, preferably citric acid, in quantities of 1 to 50% by weight.

25

13. The use of alkoxyated carboxylic acid esters corresponding to formula (I) as a surfactant for the production of rinse agents for machine dishwashing.

add 0.5